1: Petrullo E-3 (1933-34) 1939 SS19 Yaruro SS19

572 the horizon. There is no chanting as in the villages of the Xingu, no whistling, no marching to the river for an early bath. There is no conversation, no motion. After a while a dog may sit up and watch the world as silently as his master. More and more of the recumbent figures sit up; some old man becomes busily engaged in making string; a woman gives suck to a baby; others rise, and, walking with heads [372] high, chests thrust forward, go toward the bushes, to reappear soon with armfuls of wood and quickly start fires with their laurelwood fire drills. Soon everyone is sitting up, and the cheesecloth tents disappear. A few women huddle around the fires.

It is only when the wind resumes its violent blowing that the camp is stirred into activity. The chilliness of the night is forgotten, reverential thoughts are discarded. The vulgar stomach, however, is re- 512 membered. Preparations are made to take care of its daily needs. 225 Bows and arrows are examined. A harpoon arrow for turtles and 462 crocodiles, a fish arrow, a gourd, and if the hunter possesses one, a knife, comprise the equipment. Then the men go to their canoes two by two, though a young boy may be taken along to make three. He too must learn to satisfy the daily craving of his inner machinery. The hunters paddle away upstream and disappear around the bend of the river.

512 The women prepare for their own voyages. Sometimes they ac- 222 company the men, sometimes they go alone in a canoe or go inland. 462 They carry baskets on their backs suspended from the forehead by a strap. Each woman carries a digging stick. Little girls accompany them, with their little baskets and their own digging sticks, in imitation of the grown-ups. Some women carry babies astride the hip, 291 feeding at the large full breasts. Naked but for a loin covering, with hair falling down their backs, they seem to fit the wild landscape. Some may wear a camisole, but that is only a thin veil, and their bodies are seen underneath. The loin covering is tied at the back, and, as they walk with chests thrown forward and high, resembles a huge tail rolled under the camisole. Their smooth-skinned ape appearance is graceful but amusing; the naked ones fit the picture better.

512 At camp are left only the old people and some young ones who 461 are too lazy to go out or have been hunting hard and need a rest. They are soon busy fixing bows and arrows, making string, carving ornaments, weaving basketry, taking care of very young children. There is very little talking and no fussing. They almost ignore each other. Those who stay at home will wait patiently for their dinner. They will watch the sun climb the heavens, and they will move from one side of the branches to the other to keep in the shade. Beaten by the wind which by noon blows a gale, bombarded by

1: Petrullo E-3 (1933-34) 1939 SS19 Yaruro SS19

grains of sand, they wait patiently and quietly, though hungry. They seek no shelter from the wind, preferring it to the myriads of insects lurking in any sheltered spot. And then, too, it is cool in the wind, terrifically hot away from it.

About midafternoon the hunters and food gatherers straggle in. They bring small crocodiles and turtles, crocodile eggs, turtle eggs, perhaps some honey; and the women return with full baskets containing changuango, a wild root that they have dug up in the savanna. They, too, may bring turtle eggs. Not always, of course. The men and the women may return with empty hands and empty baskets. In any event there is no boisterous reception, but the same silence, the same quiet acceptance of the day and what it brings as they have shown at its beginning. Fires are built larger, the women roast the roots, the men help with the turtles and the crocodiles. These are placed whole on the fire until the shells are toasted and then they are cracked open. Wives become busy delousing their husbands, using a carved stick to help in the search. Sometimes the lice are picked and eaten. But the bodies of the men are covered with numerous black blisters, showing that they have suffered the daily torment from the insects. The wife crushes all of these blisters with the same delousing tool.

Dinner is a gala time. Calabash dishes containing the various courses are placed in the center of the ring formed by each family. The food is picked up and carried to the mouth with the fingers. There are crocodile eggs. These are opened and the contents are sucked up raw. The same is done with the turtle eggs. There is the course of roasted changuango, and the pieces of turtle meat. But the real delicacy is crocodile, the best meat of all. The crocodile is eaten in its entirety, except for the entrails, and when the dinner is over some of it is left by the fire, an open invitation to anyone to fill any empty portion of his stomach. The stomachs become distended as tremendous quantities of food are swallowed. This is the only real meal of the day, and the fear of a dinnerless tomorrow drives the eaters to exceptional feats of gourmandizing until their bodies can hold no more. The lean dogs fight among themselves over the refuse heaps. The vultures glide overhead or are busy at crocodile entrails.

There is no after dinner work—no kitchen or table ware to wash, nothing to spoil the proper enjoyment of a full stomach. They eat until they have had enough, and then they move to the east of the fires to lie on the clean sands and watch the sun hide beneath the western horizon. For about half an hour they watch the ever-changing colorful western sky and when rays of light emanate from below the horizon to streak the heavens with blue and gold and white, they

1: Petrullo E-3 (1933-34) 1939 SS19 Yaruro SS19

136 Bats are plentiful, but they tend to be most abundant in the forests and hills close to the Orinoco. Armies of them fly nightly out of the caves of Guiana to feed on the fruit of the forests in the plains. One evening while crossing back from Guiana to the llanos we saw a stream of bats flying across the river. They seemed to come from a cave about 2 miles away. Though we watched them flying overhead for about half an hour, there did not seem to be any end to them.

174 Formerly the llanos were peopled by a number of tribes who have since disappeared, leaving behind them practically no knowledge of their societies. Only the Yaruros and the Guahibos inhabiting the Meta region have survived to this day. The Tamanachi, the Guamos, the Otomacos, which are best but meagerly known, have died or been killed off in recent years. I saw the last Otomaco survivors, an old woman and a boy of five, who had been saved from a reputed massacre. The Achaguas seem to have disappeared in recent years also.

177 What has happened to these people can be easily understood when it is considered that during the past 25 years the worldwide unrest has driven adventurers to many corners of the earth, and these people have been exposed to the marauding "revolutionary" bands and to the equally destructive cupidity of the crocodile hunter and the rancher.

161 There are 150 Yaruros left in the region of the Capanaparo and
101 on an island at the mouth of that river called the Linda Bara. It is claimed that on the Sinaruco there are other bands but no contact was made with them. Formerly the Yaruros occupied a large territory and perhaps roamed the plains, as well as the rivers, but since the land has been taken up by the ranchers they have been forced to the river banks.

136 The animals of greatest interest to the Yaruros are: jaguar, puma, wild pigs, capibara (the chiguire), armadillo, snakes, jivaro stork, vultures, manatee, tonino, crocodiles, iguana.

137 Plant life has great importance as a source of food, usable wood,
222 medicines, and narcotics. The moriche and macanilla palms supply the Yaruros with fibers and bow wood. The chigua supplies him with flour; the changuango and barbaco with edible roots.

101 The Yaruros call themselves "Pumeh." In the literature they are referred to as "Saururi" (Gumilla), "Zavuri" (Gilii), and more recently as Jaruros, Sayuros, etc. According to my informants Yaruro or Jaruro, is a Guahibo word by which they are known to that people. The Guahibos are known to the Yaruros as "Teiricoa," "people of the forest." The word Pumeh has no exact translatable meaning. The closest equivalent is the Spanish "gente." When a Yaruro uses it he implies "the people," "the chosen people." Only the Yaruros are Pumeh, but the term occasionally includes other tribes. All non-

1: Petrullo E-3 (1933-34) 1939 SS19 Yaruro SS19

593 The sense of strict inviolability of personal rights carries over to personal services. Never did a husband order his wife to do anything outside of her proper domain. While I lived with them, in spite of the excellent care they gave me, even to the point of anticipating my wishes in a great many cases, never did a husband request his wife to prepare food for me. He asked her if she would, acting merely as my messenger. 604 No closer relationship can exist than between maternal uncle and nephew, yet even he does not feel free to ask any service of his nephew, nor to take the latter's personal property.

DIVISION OF LABOR

462 Sexual dichotomy in economic activities is clearly defined. In a general way, it may be said that the rougher, harder, and more dangerous work belongs in the province of male activity and that there is no task which calls for strength or danger that properly belongs in the realm of woman's activity. Should any woman be engaged in a hard or dangerous piece of work and a man happens to be present there is a tacit assumption of the task by the latter. Hunting and fishing and presumably the act of fighting in war are man's tasks. The gathering of roots, fruits, seed, and their preparation belongs to the women. [222] It is interesting to note that the gathering of honey, which entails some risk, is done by the men. The making of canoes, the making of implements, of hammocks, the activities in making camp are all in man's domain. The preparation of food and the making of pottery and basketry are woman's tasks.

HUNTING AND FISHING

224 Hunting and fishing are male occupations exclusively. As soon as the young boy is able to toddle about he is made to play with bow and arrow and learns to make these indispensable tools. It is a common sight to see little boys who are too young to be taken along by the men on hunting expeditions playing at the game of hunting; and when a man is in camp busily preparing his hunting equipment his young son is by his side working industriously on miniature bows and arrows.

225 The equipment of the hunter is simple. Bow, arrow, and canoe are indispensable. A Yaruro does not like to roam on land, but there is no need for him to do so since he can get his game in the watercourses or along their banks. So he sets off in the early morning, generally accompanied by his hunting companion, to look for crocodile (*Crocodilus babu*). He will hunt for other forms of life only reluctantly, having a special liking for crocodile meat.

Because of the shyness of crocodile the hunter is most often forced to shoot at it from a distance. Since an arrow will seldom kill one

1: Petrullo E-3 (1933-34) 1939 SS19 Yaruro SS19

225 411 501 of the beasts it is necessary to shoot it with a barbed arrow whose head becomes detached from the shaft but remains attached to the latter by a string. The babu will make for deep water and submerge, but the shaft will float on top, and the beast is drawn to the surface by its means, to be dispatched by another arrow or by a knife blow.

The technique for hunting turtles is similar but its execution is more difficult, due to the smaller size of the turtle. These generally can be seen floating on the water with their heads held erect above the surface.

226 Fishing is done mostly with bow and arrow. The hunter stands up on the prow of the canoe which is guided into the proper position by his companion paddling in the stern. When the hunter is almost over the fish he shoots his arrow some inches in front so as to allow for the deflection caused by the water.

224 Deer is seldom hunted since the Yaruro shun the land for fear that they may be accused of killing cattle. Unless the deer is caught on the river bank in the early morning or in the evening it is stalked. The hunter fixes his gaze on the deer and moves forward a few feet at a time, stopping stock still at the slightest sign of alarm on the part of the deer. In this way he can approach to within arrow range. [292] This technique takes great patience and time. The hunter may camouflage himself by painting his torso white and pasting feathers on it. He wears a mask in imitation of the jivaro stork, which consists of a black head and beak and a red collar around the neck. He may use the beak of the jivaro or substitute his bow for it. Mimicking the motions of the jivaro, he approaches the deer. When he is close enough he waits for the deer to look up, when he transfixes it [411] with an arrow. The arrow used is so heavy that it cannot be launched from afar.

222 In addition to these, the armadillo, the tortoise, and the chiguire are hunted. The hunter does not fail to gather turtle eggs, crocodile eggs, and honey as he roams along the river banks.

FOOD GATHERING

222 It is the task of the women to gather supplementary food. They organize their own expeditions. Armed with digging stick and baskets and accompanied by the children, they roam the plains, digging up the changuango, the barbaco, and the chigua.

MATERIAL CULTURE

511 In material culture the Yaruros are poverty stricken. Their nomadic existence limits their possessions to what they can carry with them in their canoes, which is very little. The whole range of objects made or possessed by the Yaruros consists of canoe, paddles,

1: Petrullo E-3 (1933-34) 1939 SS19 Yaruro SS19

iron hoe, which is also made by the Yaruro out of any heavy scrap of iron that they may gather. Sometimes they will work for the ranchers and with their earnings purchase this type of hoe from a trader. However, such a digging tool is quite a luxury and sharpened sticks are more common.

MORTARS AND PESTLES.—During the rainy season, the Yaruros gather chigua, a seed, which they dry and pound into flour. Mortars of wood shaped as shown in figure 20, *a*, *b*, are used and the pestle is any ordinary hard stick.

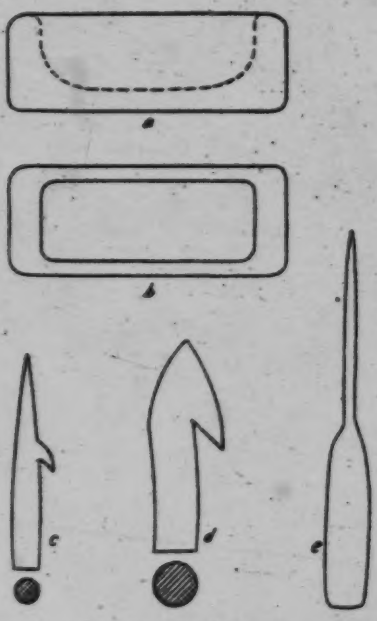

FIGURE 20.—*a*, *b*, Wooden mortar. *c*, Bone or iron point used for hunting chiguire. *d*, Hook used for manatee. *e*, Cooking paddle.

COOKING LADLES.—These are small wooden paddles used in cooking, especially when meat is boiling in a pot (fig. 20, *e*).

HAMMOCKS.—The Yaruros prefer to sleep on the sands, especially during the dry season. The men make hammocks, however, small ones generally used by children as cradles, and by the women shamans when they sing, during the day. During the rainy season they may employ them for sleeping.

The fiber employed to make the hammock string comes from the moriche leaf. The string may be very fine, of course, depending on the interest of the maker. It is made by the men. To weave the hammock a loom is made of two poles thrust into the sand to which are fastened two crosspieces at both the top and bottom. The string is then wound around these crosspieces. The weaver employs a knotter's netting technique. When the entire hammock has been woven the weaving is held in place by another string thrust through one of the woven rows.

ROPE.—The fiber mostly employed by the Yaruros is taken from the leaf of the moriche and the macanilla. The inner cortex of the leaf is stripped off and dried and then is taken apart strand by strand. These long fibers are then moistened and twisted together in two's and three's into a string by rolling them on the thigh with the palm of the hand. A stronger string is made in the same way and used for making hammocks. The bow strings are made from the fiber of the macanilla.

1: Petrullo E-3 (1933-34) 1939 SS19 Yaruro SS19

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1. Woman weaving a mat. Note the use of the foot.

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2. Woman foraging for food. Note: braided hair, method of carrying basket, woman's girdles, bands below the knee and on the ankles, method of carrying child, and digging stick.

(End Plate 13)

area is only such in reference to the presence of a given technology. The presence of such a technology is not guaranteed in any particular culture by any historical, evolutionary, geographical, or ecological necessity. Its presence may entail a particular historical explanation or a general evolutionary one. In any case, its absence entails the absence of the use of certain resources whose presence we can observe only in retrospect. 311

Other resource areas besides those utilized because of the presence of horticulture among the Yaruro become available by their possession of hunting, gathering, and fishing technologies, as well as recently acquired animal husbandry in the form of pig-herding. Hunter animals include deer, armadillo, capybara, paca, peccary (?), iguana, and a number of birds (see Table II, p. 4)[1]. These are variously distributed spatially according to the specific ecological niches for which they are adapted. Thus deer are apparently usually found dispersed in the somewhat damper, low-lying savanas where grass is greener and water more available away from the scene of human activity. Armadillo are found distributed throughout the savana. Other species, however, such as the capybara, live near the edge of permanent waters, mainly the rivers. Alligators also live only in the rivers. The faunal carrying capacity of the savanas appears to be quite low in the Cinaruco llanos since foraging foods for larger game animals are sparse. It is important to note that not only is the overall carrying capacity governed by the minimum average food supply of the savanas in the florally more restricted dry season,[2] but the distribution of animals varies considerably from the wet to the dry season. In the latter, animals tend to cluster nearer the rivers or the widely dispersed water holes. Consequently, the locus of hunting must also shift seasonally (see Maps)[3]. Savana hunting techniques are neccessarily different from those used in procuring food in the rivers, whether hunting alligators or capybara, or, of course, fishing. There is some seasonal variation in the locus of fishing, too, although this is much less marked on the Cinaruco than on the freely-flooding streams of the flatter, more north-easterly savanas of the Apure llanos. In the rainy season, fish move up the larger streams into somewhat shallower waters where more plant and insect food is available to them. However, they are apparently unable to move up smaller streams which often have rapids-like stretches interrupting their course. Thus fishing in the rainy seasons is directed towards the larger creeks and away from the smaller creeks and the river itself, where the water has become too deep for successful fishing since the fish are scarcer and more difficult to see in the deep, swift currents of winter. In respect to animal husbandry, recently introduced pigs are pastured anywhere in the savanas but preferably next to the village or quite a distance from it, in either case far from the nearest gardens (Sp. *conuco*, Y. *tadó*), an effort which is rarely successful, since the pigs, in their wisdom, are among the main predators on the garden crops. Gathering may be carried out in the dry or the wet savana depending upon the plant food to be gathered, or it may be carried out near the creeks especially for the fruit of the moriche palm. The rivers do not appear to be used in gathering.

224 137 [221] 226 133 231 [241] 222

[1] [See pp. 35-37, category 116 --Analyst]
[2] [See pp. 40-41, category 102 --Analyst]
[3] [For footnote, see p. 42, category 116 --Analyst]

[p.34]

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2:Leeds E-5 (1958)1961 SS19 Yaruro SS19

Yaruro	Spanish	English	Location and Techniques	Season of Prod. S d-m	F s	W m-s	S o-n	Division of Labor Prod. M	Prod. F	Food M	Prep. F	Q
chu'me	"	?	rivers, caños, hooks, sardine bait, from platform	✓				✓		/	✓	?
'yaka'ra	"	?	as above, also arrows	✓	✓	✓	✓	✓		/	✓	2
Yopok'e'"ne	" colorado	?	rivers, caños, hooks	✓	✓	✓	✓	✓		/	✓	?
šõ	caribe blanco	white piranha	rivers, arrows, hooks with especially heavy cord	✓				✓		/	✓	1
(hõde'cia	caribe	piranha	doubtful if caught on Cinaruco)									
(pu'pa	cajarro	catfish	doubtful if caught on Cinaruco)									
FRUITS, ROOTS, AND SEEDS GATHERED:												
t'o'cho	?	?	in mata from big tree, at foot	✓								1?
gu'se (cho'sõ)	guayaba	guava	bushes and low trees, distant			✓		✓			✓	1
t'u	fruta de moriche	miriti palm fruit	near caños in wet savana, from foot of trees			✓✓		✓			✓	2
'aram"be	?	?	?, from big tree (monte?)			✓		✓			1	?
tam'be	?	?	?, ?			✓						1
ma,ro'ai	cardón	teasel (?)	?, from tall trees (prob monte)			✓		✓				1?
mkai'cho	encaño	?	?, ?			✓						1?
auri"ro	?	?	?, ?			✓						1?
ya'kod,	totumo	calabash	monte (?), picked				✓	✓?			✓?	3
si'pa	changuango	?	wet savanas, digging stick	✓					✓✓		✓	3
cho'kai	guapo	?	monte, savana, digging stick	✓	✓	✓	✓		✓✓		✓	2

Yaruro	Spanish	English	Location and Techniques	Season of Prod. S d-m	F a	W m-s	S o-n	Division of Labor Prod. M	Prod. F	Food Prep. M	Food Prep. F	Q
ma"hikai	solu ??	?	savana, digging stick	××					××		××	1
ka'ta	changuanito savanero	?	as above	×× ××					×× ××		××	2?
pa'ra	barbaco	?	monte, digging stick	×× ××					×× ××		××	3
gwe'pe (=gwepe'ka)	chigo	? (seed)	near monte, big trees, ground			×× ××			×× ××		××	2
ge (=ke)	chigo	? (seed)	?, ? (as above?)								××	?
ANIMAL HUSBANDRY:												
o'bweia	marrano	pigs	savanas, herding (introd.)	×× ××	×× ××	×× ××	×× ××	×× ××	/	×× ××	×× ××	3
oka'raro	gallina	chickens	dunes near houses (")	××	××	××	××	××	/		××	1
ANIMALS HUNTED:												
(to)ha'rigu'ri(a'na)	oso hormiguero	giant ant eater?	savana, bow and arrow	××	××	××	××	××		××	××	4
ha'ri	baba	alligator	rivers, heavy barbed arrow	×× ××	×× ××		××	×× ××		×× ××	××	3
mbwa	venado	deer	savanas, lance arrow, gun	××	××	××	××	×× ××		×× ××	××	3
ci'do	chigüire	capybara	monte, river, " ", fish arrow	×× ××	××	××	××	×× ××		××	××	3-
tapu'ra	conejo	rabbit	savana, fish arrow	××	××	××	××	××		?	××	1?
puri	lapa	paca	caño, monte, traps, all arrows	××	××	××	××	××		?	?	1?
ya'nau"mi	iguana	water lizard	rivers, montes, fish arrow	××	××	××	××	××		?	?	1?
'ge"re	cachicamo	armadillo	savanas, traps, sticks, hand	××	××	××	××	××		××	/	3-
'iparime"ta	manto	?	savanas, traps, arrows	××	××	××	××	××		?	?	?

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[p.35]

represent his people to the outside world without consultation and to make arbitrary decisions for them inside the community — mainly in his own interest — was, with the consent of the community, assassinated by one of the members, now in excellent standing in that community as a respected shaman. The chief in question had stepped beyond the bounds designated for his status. In sum, the position of chief, even though formally recognized by Yaruro society and reinforced by formal recognition and appointment by Venezuelan authorities, is feeble as an institution and as a status.[6] It is our hypothesis that ecological conditions of Yaruro life determine the form of the chieftainship in such a way that its stronger institutionalization would be impossible, and we turn to this question now.

III

Yaruro subsistence activities[7] comprise swiddening, gathering, pig herding, hunting and fishing, mentioned in the order of their importance as contributors to the total food supply as measured in calories.[8] Horticulture probably provides 60—70% of the total annual food supply. The horticulture practiced is characteristic of tropical forest slash-and-burn gardens, with a slow rotation of plots in order to permit soil renewal and weed control. Trees are cut, at present with steel axes and formerly, apparently, with axes of bone or shell, and then burnt. Occasional fences are roughly made of the logs to keep out pigs. Bitter manioc (*Manihot utilissima*),[9] in several varieties, is the main crop, though sweet manioc (*Manihot aipi*), also in several varieties, is planted too, as are corn, bananas, sugar cane — each in several varieties — and a number of lesser crops such as melons, squashes, pumpkins, pineapples, sweet potatoes, and yautia or ocumo (*Xanthosoma sagittifolium*). Crops are planted with a digging stick which may also be used in harvesting. Gardens are weeded, once only, early in the growth of the crops. Other than clearing, the only soil preparation is the construction of hills for planting bananas. This is done by burning hills made by a certain species of ants (*huachaquero*). The hills, which are quite wide and low, are filled with organic matter enriching the soil.[10] Harvesting is aided with baskets for carrying the crops. Baskets contain about half a bushel or less. No fertilization, no terracing, no drainage, no irrigation, no extensive turning of the soil is done.

The gathered resources include a number of roots, particularly changuango, changuanito, and guapo (*Maranta arundinacea*);[11] varied fruits, especially that of

[6] Professor Benjamin N. Nelson informs me that in medieval Spain, village communities had an official, also called *capitan*, whose function was to treat with state functionaries representing the world beyond the village community's frontier. It is possible that the Yaruro capitan, and many others in Venezuela, are an acculturative transfer of this office to tribal groups. In the case of the Yaruro, this would have happened some 250—300 years ago.

[7] The use, here, of the terms 'activity', 'tasks', 'techniques', 'tools', 'resources', and 'habitat' corresponds to the definitions given in Leeds, 1960 b.

[8] Cf. Leeds, 1961, which gives this data in detail and describes the habitat and horticulture *in extenso*.

[9] Native terms for these crops are given *ibid.*

[10] *Ibid.*, note 9, contains data on soil values.

[11] Identifications are from Pittier, 1926.

222 the moriche palm (*Mauritia flexuosa*); several seeds, notably chiga (= chigo?; — *Campsiandra comosa*); calabashes (*Crescentia Cujete*), and bees' wax and honey. Non of the items gathered are large in size or difficult of access except the bees' wax, one or two of the fruits, and calabashes which grow on higher trees, or may be very far. Gathered foods may be picked up by hand or with the aid of a digging [412] stick or machete, and may be brought back in the harvesting baskets. Other items [415] which may be gathered include the raw materials for baskets and mat-making or 824 for food-processing tools such as the tipití, pots, or mortars and pestels. These [285] items include the fronds of the moriche palm, used for making cord, baskets, tipi- [323] tís, mats, and sacks; in some villages, clay for pots; reeds for arrows, wood for house beams, mortars and pestles, bows, and for cooking utensils. Wood, palm fronds, and many other items are gathered with the help of the all-purpose machete.

231 Pig herding is unsystematically done. The pigs, a recent acquisition, spend most of their time at will in the foraging grounds. The significant herding activity occurs only at times when one or another of the groups of pigs breaks into the gardens, an almost daily occurrence. They are then driven to the foraging grounds again, or if late in the day, into a close till morning when they are either driven forth again or allowed to scavenge in the village. There are several herds of pigs of sizes varying from perhaps a maximum of 20 including piglets to the more usual six or eight animals. The only tools used in pig care include a slaughtering [412] stick with which the pig is clubbed to death and knives to cut up the meat. The [262] close is built of logs cut with a machete and carried in by one or two men. Pig meat, though eaten with regularity, is definitely a secondary element of diet.

411 Hunting is done almost exclusively with the bow and arrow. There are several types of arrows. One for fish has a metal point approximately 4 inches long with a side hook about five inches from the tip, where the tip is set into the shaft. This may also be used for smaller animals. One for birds has a blunt wooden head, and does not appear to be used very often. A third type is used for larger animals such as deer and capybara. It has a blade about 6 inches long shaped like a laurel leaf and, at present, made of steel. At the base of the blade, a small cross-piece is affixed in order to prevent the precious blade from piercing so deeply into the animal that, if it escapes, it would carry the arrow away with it. The fourth type of arrow is used for turtles, tortoises, and alligators or other animals which submerge. The head is short and strong with a sharp recurved hook. The entire metal head is attached to a cord, and this in turn is attached to the arrow shaft, from which the head is detachable. On detaching, the shaft floats and the game can be followed in its underwater course. The bow is generally about 6 feet long or a little more. It is made rather crudely of the wood of the macanilla palm (*Bactris Gaspiaes*). Some animals, especially land tortoises and armadillos, may be caught [136] [224] by hand. Alligators may also be hunted with exceedingly heavy steel hooks and a strong line. In hunting, no traps, nets, surrounds, or drives are used.

226 Fishing is done chiefly with bows and arrows, though an arrow may sometimes be used as a spear, repeatedly jabbed into grassy waters near the river banks. Fishing may also be done with hooks and lines of different sizes. Bait is also used. A man may fish from a platform built by lashing logs horizontally to two trees

4: Leeds E-5 (1958) 1960 SS19 Yaruro SS19

along the west-to-east flowing rivers in ribbons some kilometers wide. Most significant fauna and flora of economic use occur in these ribbons. This ecological distribution of resources governs subsistence activities whether they be mainly hunting, fishing, collecting, or horticulture.

Yaruro subsistence comprises all these activities. (2). Horticulture in the rainy season appears considerably to outweigh all other sources of food together, but in the dry season, hunting, fishing, and collecting perhaps equal or outstrip horticulture. In any case, slash and burn gardening of manioc, corn, plantains, and a number of lesser crops is by far the single most important economic activity. The technology is exceedingly simple in all aspects of production, the main tools being the machete and digging stick. The most elaborate technology occurs in the conversion of food into edibles and in the manufacture of hammocks, pottery, objects of wood such as canoes, and woven containers of all types.

The economic organization displays a sharp division of labor between men's and women's work. Men do all hunting and fishing, make all objects of wood, haul lumber and householding materials, make hammocks, and carry out the heavy labor of gardening. Women do most of the collecting of roots, seeds, and fruits. Since collecting contributes a substantial portion of the food supply in summer, woman's contribution, here, is of considerable communal importance. Women's work, a continuous activity from dawn to dusk, is, first, the conversion of raw foodstuffs into edibles. Second, women make all pottery, mats and baskets, the manioc squeezers, and much of the cord used to make hammocks. Another important contribution of women is their help in harvesting in the gardens. Men sometimes help the women with the cookery.

Men may work alone, in groups of 2 or 3, or in larger groups on rare occasions. No occasion exists for all men to work at a single task since there is no technological need for it. Women's work groups for collecting or householding are of similar size. Work group alignments are often based on choice or accident but in other instances coresidence and kinship are determinants. The household, however, constitutes the only really necessary cooperative group for production. The man is a funnel for produce which the woman converts to

(2) The present description applies to the Cinaruco River Yaruro where the major part of the writer's field work, supported by a grant from the Social Science Research Council, was done. The Capanaparo River Yaruro were reported by Petrullo (1939) and Le Besnerais (1948) as being hunters and gatherers, although Le Besnerais observed small horticultural patches which he claimed were diffusions from Venezuelan farmers which had occurred recently. Le Besnerais in 1954 states directly that they were horticulturalists, omitting any mention of possible diffusions from Venezuelans. The passing mention of horticulture by Pinsson (1947) confirms the present writer in his opinion that, although horticulture may be more restricted on the Capanaparo than on the Cinaruco and Cunaviche-Arauca (where the writer also spent several weeks) which are not discussed at all by Petrullo or Le Besnerais, nevertheless, the absence of horticulture is probably not aboriginal with the Yaruro as has been suggested by Kirchhoff (1948, p. 456). Rather the restricted gardening is a result of ecological conditions on the Capanaparo which are less favorable to horticulture than on the neighboring rivers, combined with extremely violent acculturation, including large-scale massacres of natives. The only other possibility, in my opinion, is that horticulture was introduced by the missionaries in the early part of the Eighteenth Century, which is certainly the period when the Yaruro first became acquainted with iron tools (cf Lodares, 1922).